## Abstract of the Disclosure

Intralumenal material removal systems are provided. The intralumenal material removal system includes a cutter assembly positionable in the lumen of a mammalian subject and operably connected to system controls. One composite cutter assembly comprises a distal, fixed diameter cutter and a proximal, adjustable diameter cutter, the cutter assembly being axially advanceable by translating the drive shaft and rotatable by rotating the drive shaft. The adjustable cutting assembly is adjustable between a smaller diameter condition and a larger diameter condition by rotation of the drive shaft in opposite directions. The cutter may thus be introduced to and withdrawn from the material removal site in a retracted, smaller diameter condition that facilitates translation and navigation of the device through various lumens. The adjustable cutting assembly may be selectively expanded at the material removal site to facilitate cutting, removal and aspiration of the occlusive material. Temperature sensing at the material removal site and automated control features are also disclosed.